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12. (Amended) The block copolymer of claim 8, wherein a ratio of said two or more monomers in said random block is chosen such that a decrease in the proportion of said at least one hydrophobic monomer results in an increase in the hydrophilicity of the block copolymer.

REMARKS

Claims 1-16 are pending, but stand rejected as discussed more fully below. Claims 17-22 were cancelled as part of an earlier restriction requirement. Claims 1, 5-8, 11 and 12 have been amended to help more particularly define and distinctly claim the subject matter of the invention. In other words, the amendment of claims was done to expedite the prosecution of the pending application. Applicant does not concede that the amendment or cancellation of claims was necessitated by the Action. The amendments serve to clarify and distinguish the claimed subject matter.

Applicant respectfully submits that claims 1-16 are now in condition for allowance.

No new subject matter has been added. Support for the amendments to the claims can be found throughout the specification as originally filed and specifically in the specification at, for example page 24, lines 4-15 and page 25, lines 7-17.

In view of the claim amendments and following remarks, Applicant respectfully requests allowance of claims 1-16.

Claims 1 and 8 As Amended Are Allowable

Claims 1-16 stand rejected under 35 U.S.C. § 112 as indefinite. Claims 1, 2, 4, 6-9 and 11-16 stand rejected under 35 U.S.C. § 102(b) as anticipated by, or alternatively under 35 U.S.C. § 103(a) as obvious over Matyjaszewski. Claims 8, 9 and 11-16 stand rejected under 35 U.S.C. § 102(b) as anticipated by, or alternatively under 35 U.S.C. § 103(a) as obvious over Klaerner. Applicant respectfully traverses the rejections based on the following remarks.

112 Rejections

With regard to claims 1 and 8, the Office Action states that the term “soluble” is relative and unclear. Applicant has amended claims 1 and 8 to recite the level of solubility and the specific solvent utilized. Support for the use of water, methanol, ethanol and isopropanol as well as the level of solubility or dispersibility claimed can be found at, for example, page 25, lines 7-17. These amendments removed the relative nature of the solubility level.

With regard to claim 5, the Office Action stated that the term “star” is unclear. Applicant has amended claim 5 to remove the term “star” from the claims and now includes the term “moieties.” The term “moieity” finds support in the specification at, for example, page 10, lines 11-18.

The Office Action also stated that claim 6 is unclear. Applicant has amended claims 6, 7, 11 and 12 to further clarify the claims.

Applicant respectfully asserts that these amendments clarify the claims and obviate the pending rejections.

In view of the amendments Applicant respectfully requests that the Examiner withdraw the § 112 rejections of claims 1-16.

102 and 103 Rejections

Claims 1, 2, 4, 6-9 and 11-16 stand rejected under § 102 as anticipated, or alternatively under § 103 as obvious over the cited references. Applicant submits that the claims are not anticipated by the references because the references do not meet every feature of independent claims 1 and 8 as amended.

Claims 1 and 8 as amended require that the polymer comprises at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, N,N-dimethylacrylamide, dimethyl aminoethyl methacrylate, quaternized dimethylaminoethyl methacrylate, methacrylamide, (2-methoxyethyl)acrylate, N-t-butyl acrylamide, maleic acid, maleic anhydride and its half esters, crotonic acid, itaconic acid, acrylamide, acrylate alcohols, hydroxyethyl methacrylate, diallyldimethyl ammonium chloride, vinyl ethers, maleimides, vinyl pyridine,

vinyl imidazole, other polar vinyl heterocyclics, styrene sulfonate, allyl alcohol, vinyl alcohol, salts of any acids and amines listed above, and mixtures thereof.

Example 33 of Matyjaszewski as cited by the Office Action does not disclose a polymer having any of these monomers. Furthermore, Matyjaszewski does not disclose any other polymers that fulfill all of the requirements of independent claims 1 and 8 as amended.

Klaerner also does not disclose any polymer that meets all of the requirements of independent claim 8 as amended. The polymer cited by the Office Action does not have an A-B-A structure as is required in claim 8. For at least this reason, independent claim 8 is patentable over Klaerner.

In light of the fact that these claims contain subject matter that defines over the art of record, Matyjaszewski and Klaerner do not anticipate or make obvious independent claims 1 or 8. In addition, since the claims have been amended to overcome the § 112 rejections, independent claims 1 and 8 stand in allowable form. Applicant respectfully requests that the § 102 and § 103 rejections be withdrawn and that the rejected claims be allowed.

The Claims That Depend on Claims 1 and 8 Are Allowable

Because claims 2-7 are dependent on and incorporate all of the limitations of independent claim 1, as well as recite further limitations, the above arguments apply a fortiori to these grounds for rejection. Because claims 9-16 are dependent on and incorporate all of the limitations of independent claim 8, as well as recite further limitations, the above arguments apply a fortiori to these grounds for rejection. Thus, claims 2-7 and 9-16 are patentable over the asserted references, and Applicant respectfully requests allowance of these claims.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned “**Marked-up Version Showing Changes.**”

This application now stands in allowable form and reconsideration and allowance is respectfully requested.

Respectfully submitted,

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MARKED-UP VERSION SHOWING CHANGES**IN THE SPECIFICATION**

Please amend the paragraph at page 5, line 10 as follows:

The term "heteroalkyl" refers to an alkyl as described above in which one or more [hydrogen atoms to any] carbon atoms of the alkyl is replaced by a heteroatom selected from the group consisting of N, O, P, B, S, Si, Se and Ge. The bond between the carbon atom and the heteroatom may be saturated or unsaturated. Thus, an alkyl substituted with a heterocycloalkyl, substituted heterocycloalkyl, heteroaryl, substituted heteroaryl, alkoxy, aryloxy, boryl, phosphino, amino, silyl, thio, or seleno is within the scope of the term heteroalkyl. Suitable heteroalkyls include cyano, benzoyl, 2-pyridyl, 2-furyl, $\text{Me}_3\text{SiOCH}_2(\text{CH}_3)_2\text{C}-$ and the like.

IN THE CLAIMS

Please amend claims 1, 5-8, 11 and 12 as follows:

1. (Amended) A block copolymer characterized by the general formula $(\text{AB})_n\text{-Core}$, where A and B are polymeric blocks and Core is a non-polymeric linking core; wherein said block copolymer comprises at least one random block comprised of two or more monomers, wherein at least one of said two or more monomers is hydrophilic and at least one of said two or more monomers is hydrophobic such that an absolute difference in log p between said at least one hydrophobic and hydrophilic monomers is at least about 0.5; and n is 2 or more; wherein the polymer comprises at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, N,N-dimethylacrylamide, dimethyl aminoethyl methacrylate, quaternized dimethylaminoethyl methacrylate, methacrylamide, (2-methoxyethyl)acrylate, N-t-butyl acrylamide, maleic acid, maleic anhydride and its half esters, crotonic acid, itaconic acid, acrylamide, acrylate alcohols, hydroxyethyl methacrylate, diallyldimethyl ammonium chloride, vinyl ethers, maleimides, vinyl pyridine, vinyl imidazole, other polar vinyl heterocyclics, styrene sulfonate, allyl alcohol, vinyl alcohol, salts of any acids and amines listed above, and mixtures thereof; and provided that said block copolymer is [at least partially] soluble or miscible in water, methanol, ethanol or [alcohol]isopropanol or a combination thereof at a concentration of at least about 20 mg/mL at room temperature.

5. (Amended) The block copolymer of claim [3]1, wherein said linking core is selected from the group consisting of 4-arm, 6-arm, 8-arm and 12-arm [stars] moieties.
6. (Amended) The block copolymer of claim 1, wherein a ratio of said two or more monomers in said random block is chosen such that an increase in the proportion of said at least one hydrophobic monomer results in a decrease in the solubility or dispersibility of the block copolymer in water , methanol, ethanol, isopropanol or a combination thereof.
7. (Amended) The block copolymer of claim 1, wherein a ratio of said two or more monomers in said random block is chosen such that a decrease in the proportion of said at least one hydrophobic monomer results in an increase in the solubility or dispersibility of the block copolymer in water , methanol, ethanol, isopropanol or a combination thereof.
8. (Amended) A block copolymer that is at least [partially] soluble or miscible in water at a concentration of at least about 20 mg/mL, comprising a polymer having at least the structure A-B-A, where A and B are polymeric blocks, and wherein said polymer comprises at least one random block comprised of two or more monomers, provided that at least one of said two or more monomers in said random block is hydrophilic and at least one of said two or more monomers is hydrophobic, wherein the absolute difference in log p between the hydrophobic and hydrophilic monomers is at least about 0.5; wherein the polymer comprises at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, N,N-dimethylacrylamide, dimethyl aminoethyl methacrylate, quaternized dimethylaminoethyl methacrylate, methacrylamide , (2-methoxyethyl)acrylate, N-t-butyl acrylamide, maleic acid, maleic anhydride

and its half esters, crotonic acid, itaconic acid, acrylamide, acrylate alcohols, hydroxyethyl methacrylate, diallyldimethyl ammonium chloride, vinyl ethers, maleimides, vinyl pyridine, vinyl imidazole, other polar vinyl heterocyclics, styrene sulfonate, allyl alcohol, vinyl alcohol, salts of any acids and amines listed above, and mixtures thereof.

11. (Amended) The block copolymer of claim 8, wherein a ratio of said two or more monomers in said random block is chosen such that an increase in the proportion of said at least one hydrophobic monomer results in a decrease in the [miscibility or dispersability] hydrophilicity of the block copolymer.

12. (Amended) The block copolymer of claim 8, wherein a ratio of said two or more monomers in said random block is chosen such that a decrease in the proportion of said at least one hydrophobic monomer results in an increase in the [miscibility or dispersability] hydrophilicity of the block copolymer.